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ICE BREAKER



ICE BREAKER MAGAZINE

ICE BREAKER magazine is published independently by Malcolm Wallhead and Associates as a quarterly magazine covering Tasmanian Polar and Southern Ocean related topics.

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EDITORIAL

Thanks to all the new contributors to this edition. Of special interest to suppliers of goods to the Australian Antarctic Division is the article by Shaun Walsh outlining important Environmental Purchasing Guidelines.

It is regrettable that the Premier, Jim Bacon, has had to retire from his position because of health problems. *Ice Breaker* appreciates the contributions he has made to the magazine while he was Minister for Antarctic Affairs. While in office, the Premier has supported, encouraged and participated enthusiastically in Antarctic community activities, such as the Midwinter Festival, and it is hoped that the Acting Premier, Paul Lennon, will continue this government support.

Re Igloo Satellite Cabins: After several months of negotiations with Penguin Fibreglass Pty Ltd, of Penguin, Tasmania, a contract has been signed so that all fibreglass polar field equipment will be manufactured at their factory on the northwest coast. I am pleased that Igloos will continue to be made in Tasmania and consider the image of 'penguins making igloos' rather appropriate!

Handing over manufacture to another company will leave me more time to develop the magazine and with the Midwinter Festival approaching, I am very interested to know what activities are being planned that would benefit from advertising in the next edition. Please contact me at any time from now until mid-May if you have an article or advertisement you would like included.

Ice Breaker welcomes a special contribution from a New Zealand subscriber, Klaus Pedersen from Antarctic Services Pty Ltd, who has very generously sent some polarogrammes and stamps, which will be included in this and following editions.

Anthea Wallhead

Cover: Examples of Gyotaku by Boshu Nagase. Top: *Gobionotothen gibberifrons*. Centre: *Chionodraco rastospinosus*. Bottom: *Chionodraco niyersi* [Photos supplied by Professor Harvey Marchant, AAD]



This week has seen the arrival and departure of four Antarctic ships, including the Aurora Australis and L'Astrolabe, emphasising the strength of our Antarctic gateway status.

We must however, never rest on our laurels, and that's why we are developing Tasmania's Government Antarctic Policy to enhance our State role. Thanks to everyone who has given their time and shared their knowledge and expertise within the consultation phase of our policy development process.

ACAP Secretariat

Over the coming months Tasmania will also undertake efforts to secure the Agreement for the Conservation of Albatrosses and Petrels (ACAP) secretariat in Hobart.

On 5 November 2003, South Africa was the fifth country to become a Party to the ACAP. This triggered the Agreement to enter into force on 5 February 2004. South Africa joins Australia, New Zealand, Ecuador and Spain as ACAP Parties.

Australia is currently acting as the Interim Secretariat for the Agreement, and will continue in this role until the first meeting of the parties is held. As I write, the location of the permanent Secretariat is yet to be determined. The Agreement requires that the first meeting of the Parties be held within a year of its entry into force (5 February 2005).

Hobart is likely to host the first meeting of the ACAP Parties, which is expected towards the end of 2004. If ACAP Parties agree to base the Secretariat in Australia, then Antarctic Tasmania will offer to renovate its offices to accommodate the Secretariat

If achieved this would result in a strengthened reputation for Hobart as a major international Antarctic Gateway, particularly in the area of Antarctic and Southern Ocean environmental management. Other benefits include the economic benefits that would accrue through the creation of new jobs and recurrent expenditure of the Secretariat, and the use of Hobart as a venue for annual meetings of the ratifying Parties.

2004 Antarctic Tasmania Midwinter Festival 18 – 27 June 2004

The State Government is again providing seed funding and in-kind support to underpin the 2004 Antarctic Tasmania Midwinter Festival. The Festival will take place over 10 days and provide a series of free and ticketed events to the public through which the organisers will seek to highlight and celebrate Tasmania's unique connection with the Antarctic, sub-Antarctic and Southern Ocean.

In 2003, over 35,000 Tasmanians participated in the Antarctic Tasmania Midwinter Festival, and this number is likely to grow to over 40,000, giving members of the local Antarctic institutions and community the opportunity to showcase their work to the public.

The Festival will continue to promote the State's Antarctic links to the local community, visitors to the State and the international Antarctic community. It will also constitute a unique winter tourism event and increase the capability and profile of Hobart's Antarctic sector. In doing so, the Festival will encourage economic and cultural development in the State based on a unique theme and sense of place, including by providing business opportunities for non-polar firms.

Lara Giddings
Parliamentary Secretary on Antarctic Affairs

FROM THE DESK OF WILL HODGMAN



As the Opposition spokesperson for *Antarctic Tasmania* I was pleased to receive an invitation to attend the State Government's Antarctic Community Policy Forum in Hobart on the 4th February 2004. The invitation was appropriate given the historical bipartisan approach that is generally adopted with regard to Antarctic affairs.

From a personal level, I found the Forum stimulating and informative, as discussion swung from education and training issues, to tourism and marketing opportunities.

The Government's pre-released Draft Policy and Discussion Paper provided the agenda for some vigorous brainstorming, and the value of this form of stakeholder communication was obvious. Most striking was the diverse range of ideas and initiatives generated from a variety of perspectives and stakeholder self-interest. That is precisely the result that a policy consultation forum should achieve. Each issue must be considered from competing angles.

In this instance, the process was undoubtedly assisted by the fact that the participants - those individuals and groups that are keenly involved in Antarctic, Sub-Antarctic and Southern Ocean community - are essentially moving in the same direction. The Government should be well pleased with the high level of input it receives from this active, and highly qualified collective.

The Government has also committed to ongoing dialogue with stakeholders, and it is anticipated that a policy framework generally agreeable to all will ultimately be achieved.

I congratulate the State Government for undertaking what appears to be a broad and considered consultation process, and I commend those stakeholders who have contributed to the process so far. I would encourage all parties to continue their involvement in the lead up to the release of the Government's Policy in April 2004. I will certainly look forward to its release, and the opportunity to scrutinise the Government's future policy direction for *Antarctic Tasmania*.

Will Hodgman MHA
Shadow Minister for Antarctic Tasmania

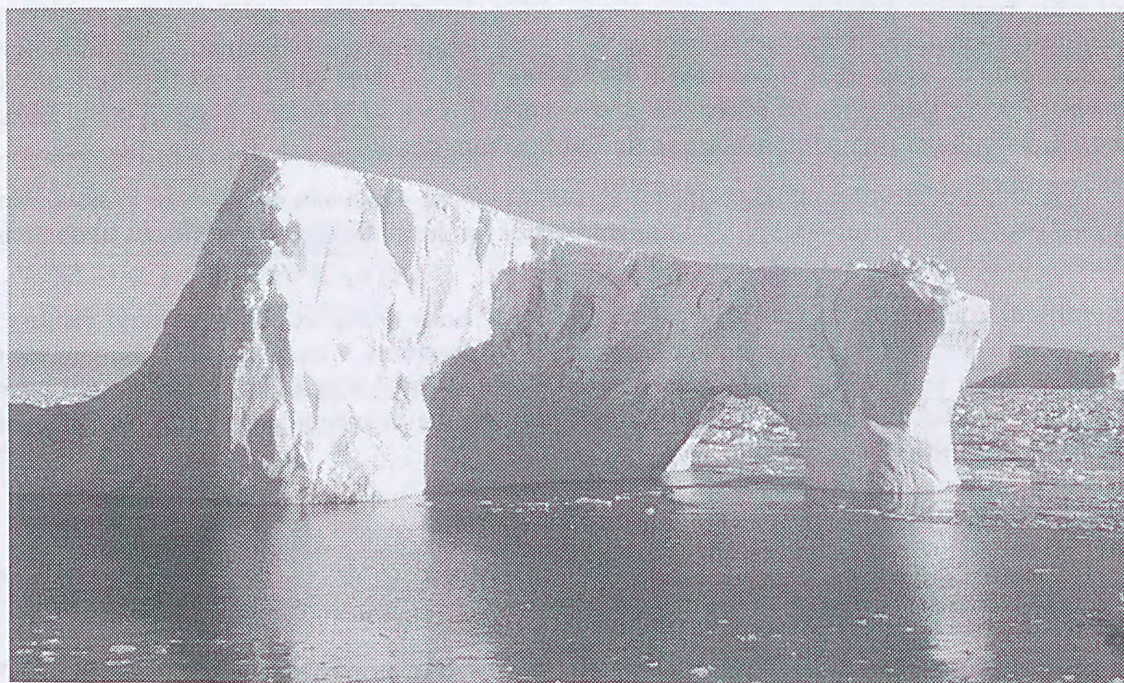


Photo courtesy ACE CRC.

ANTARCTIC TASMANIA



A central role of Antarctic Tasmania is to promote Hobart as an international centre for Antarctic and temperate marine science and research, and as a gateway city to Antarctica and the Southern Ocean. Antarctic Tasmania undertakes this role in partnership with principal agencies and industry, actively supporting cooperative efforts to advance the Antarctic sector in Tasmania.

Building upon this important role, the new year has seen Antarctic Tasmania working in conjunction with the Tasmanian Polar Network (TPN) to redevelop the network's promotional material. This has resulted in the completion of the new look TPN web site. I encourage you all to visit the new site at www.tpn.aq. I think you will agree the site will greatly assist the TPN to promote individual companies and raise awareness of Hobart's capacity to provide specialised cold climate goods and services internationally by presenting the TPN as a very professional site.

During February, Hobart was host to four Antarctic vessels in port at the same time. The vessels included the *Aurora Australis*, *L'Astrolabe*, *Kapitan Khlebnikov* and *Vasily Golovnin*. This provided us with a unique photo opportunity and Antarctic Tasmania, with the generous assistance from Helicopter Resources, was able to capture a selection of high quality aerial photographs of the four vessels in port.

The images will be used extensively by Antarctic Tasmania to develop promotional materials for the Antarctic sector. Images will also be made freely available for suitable promotional activities undertaken by Tourism Tasmania, Brand Tasmania, Hobart Ports Corporation, the Hobart City Council and of course, TPN members. If you are interested, please contact Antarctic Tasmania for further information.

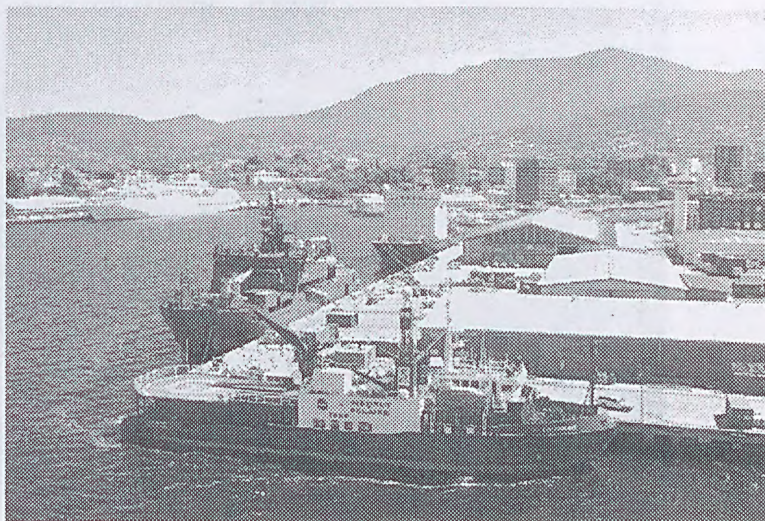
Antarctic Tasmania is currently involved in a number of key projects, including:

- final preparation of the State Antarctic Policy, which is due for release at the end of March 2004;
- preparing promotional materials for the SCAR/COMNAP trade exhibition, which will be held in Bremen Germany in July 2004;
- undertaking efforts to secure the Agreement for the Conservation of Albatrosses and Petrels (ACAP) secretariat in Hobart; and
- preparation for the Antarctic Tasmania Midwinter Festival, which will be held during 18 – 27 June 2004.

From the staff at Antarctic Tasmania, we look forward working with you all for what promises to be an exciting and productive year ahead.

Ben Galbraith
Acting General Manager

**L-R: Cruise Ship, Aurora Australis, Kapitan Khlebnikov (beind) & L'Astrolabe in Hobart, with Mt. Wellington in the background.
Photo: Peter Matthew.
© Antarctic Tasmania
2004**



TPN CHAIRMAN'S MESSAGE



I am delighted to note the terrific effort by the staff of Antarctic Tasmania and Phil Wood in getting the TPN's new website up and going in mid February. Please have a look at it and refer others to it. It is a vital piece of our strategy and a true portal to our Organisation and State.

The Port of Hobart has seen a lot of Antarctic and Southern Ocean related activity in the last couple of months with up to four ships in port at the same time. This is one of the most visible signs of Hobart's gateway role and one which Members should try to point out to 'Joe Citizen'.

Planning is now well in hand for the TPN's Trade Mission to Bremen in association with the SCAR/SCALOP Conference there in July. Judith Hennessey of Aurora Designs and Chris Boucher of Barking Spider will be our representatives in Bremen and I encourage all Members to ensure they are both well briefed on our respective corporate capabilities and availabilities.

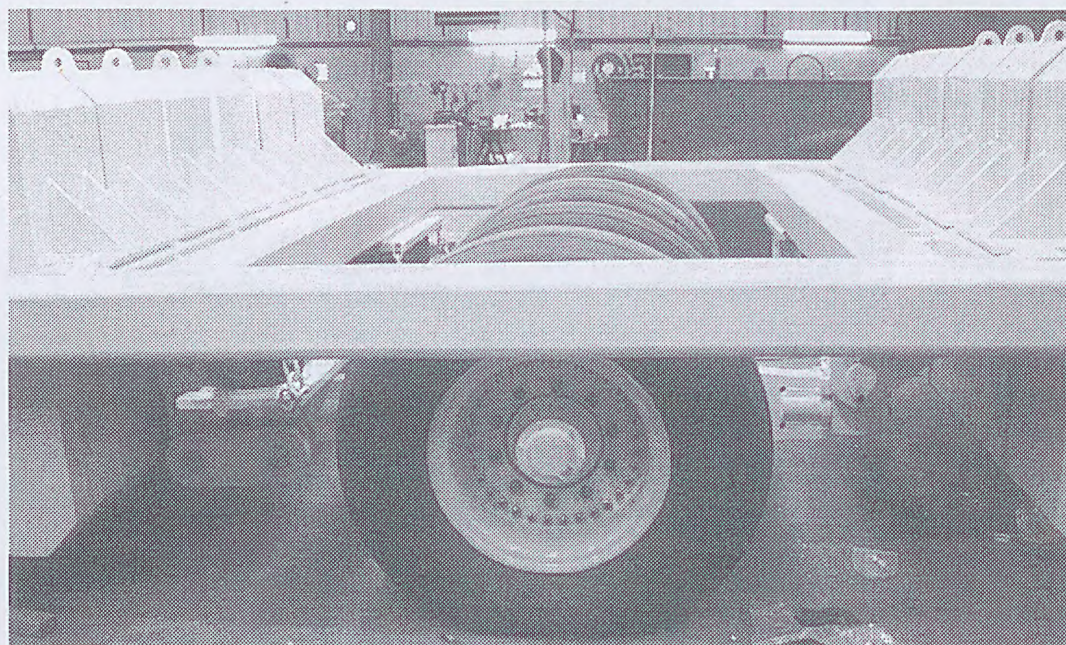
The State Government's Antarctic Policy Forum was held in February and allowed input and ideas from a wide cross-section of Hobart's Antarctic community. It is good to see such cohesion and cooperation so alive and functional in our sector.

Planning is also underway for the 2004 Midwinter Festival and the name of new Director, following Paul Cullen's tremendous first two years in the role, will be announced soon. I am sure this year's Midwinter Festival will be a great success and encourage Members to plan to participate as widely as possible, both personally and corporately. For instance, the Midwinter Dinner is a great occasion to host clients as well as increasing awareness of the potentials of Antarctica and the Southern Ocean.

The TPN has been greatly assisted by Tony Hughson's excellent work in preparing an initial draft Position Paper focusing on Antarctic Tourism. This Paper will become the subject of Network discussions in 2004. I expect and understand that there will be differing viewpoints between Members on the matter but believe it is a subject we need to address and try to come to a common and agreed viewpoint as an Organisation. I encourage Members to participate fully in this process.

In closing, I note to Members that the Governor, Richard Butler, will be attending the TPN's June meeting on 11th June 2004 and ask that you put this date in your diary please.■

Bill Lawson.



TASMANIAN-MADE ANTARCTIC EQUIPMENT

Kingston based engineering firm, **Saunders & Ward** was awarded two contracts in October, 2003 by the Australian Antarctic Division (AAD) to design and manufacture:

- One 55 tonne rubber tyred compaction roller; and
- One 8000 litre containerised stainless steel fuel tank.

Both these contracts had to be completed prior to Christmas 2003 ready for shipment to Antarctica early in 2004. Both these projects were completed in the nine-week period, a considerable achievement since both projects had to be designed prior to manufacture.

55 TONNE COMPACTION ROLLER

AAD specified in its original tender a requirement for a towable 50 tonne multi-wheeled compaction roller (see photo below and on previous page) suitable for compacting snow to create a runway surface for wheeled aircraft at its new ice runway some 50 kms southeast of Casey Station. The roller was to be towed by Caterpillar tractors at speeds of less than 10kph and be capable of compacting 40 cm of fresh snow over a number of passes to create a surface able to support a Falcon 900EX jet aircraft.

Saunders & Ward manufactured the roller using heavy-duty square hollow section (SHS) and heavy section plate steel. The roller was designed to take 12 removable 4.1 tonne counterweights, totalling a combined weight of 50 tonnes.

Six aircraft tyres (ex Boeing 737) were used which are capable of being inflated to 200 psi. The tyres were fitted to steel rims and arranged as a dual pair on a centrally supported common axle. Each pair of wheels was supported by an independent suspension.

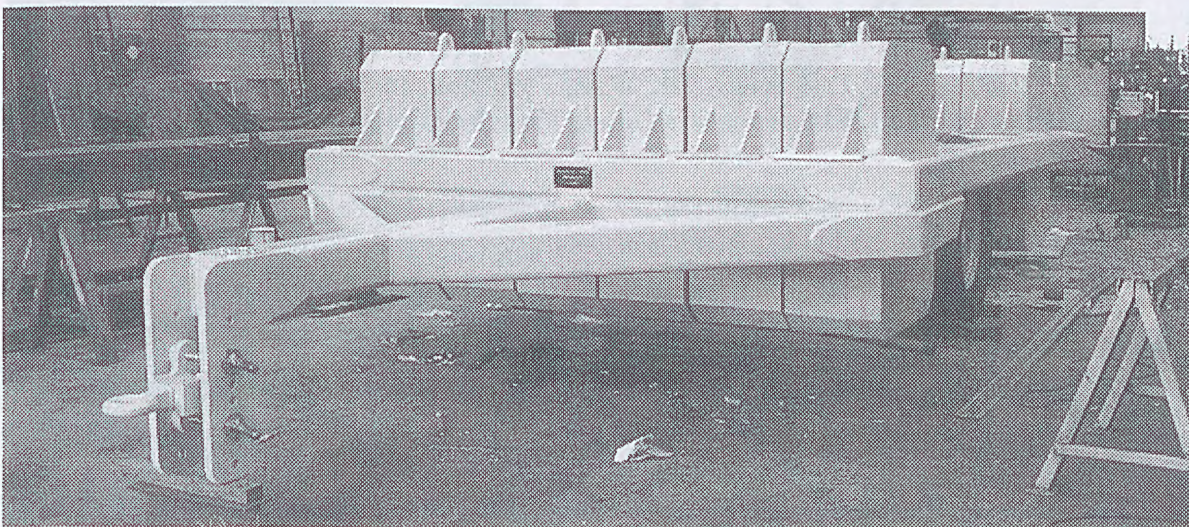
AAD personnel tested the roller in January 2004 at the runway site in Antarctica. Using a tyre pressure of 88 psi the roller displaced a considerable amount of snow and achieved compaction results above the level originally specified.

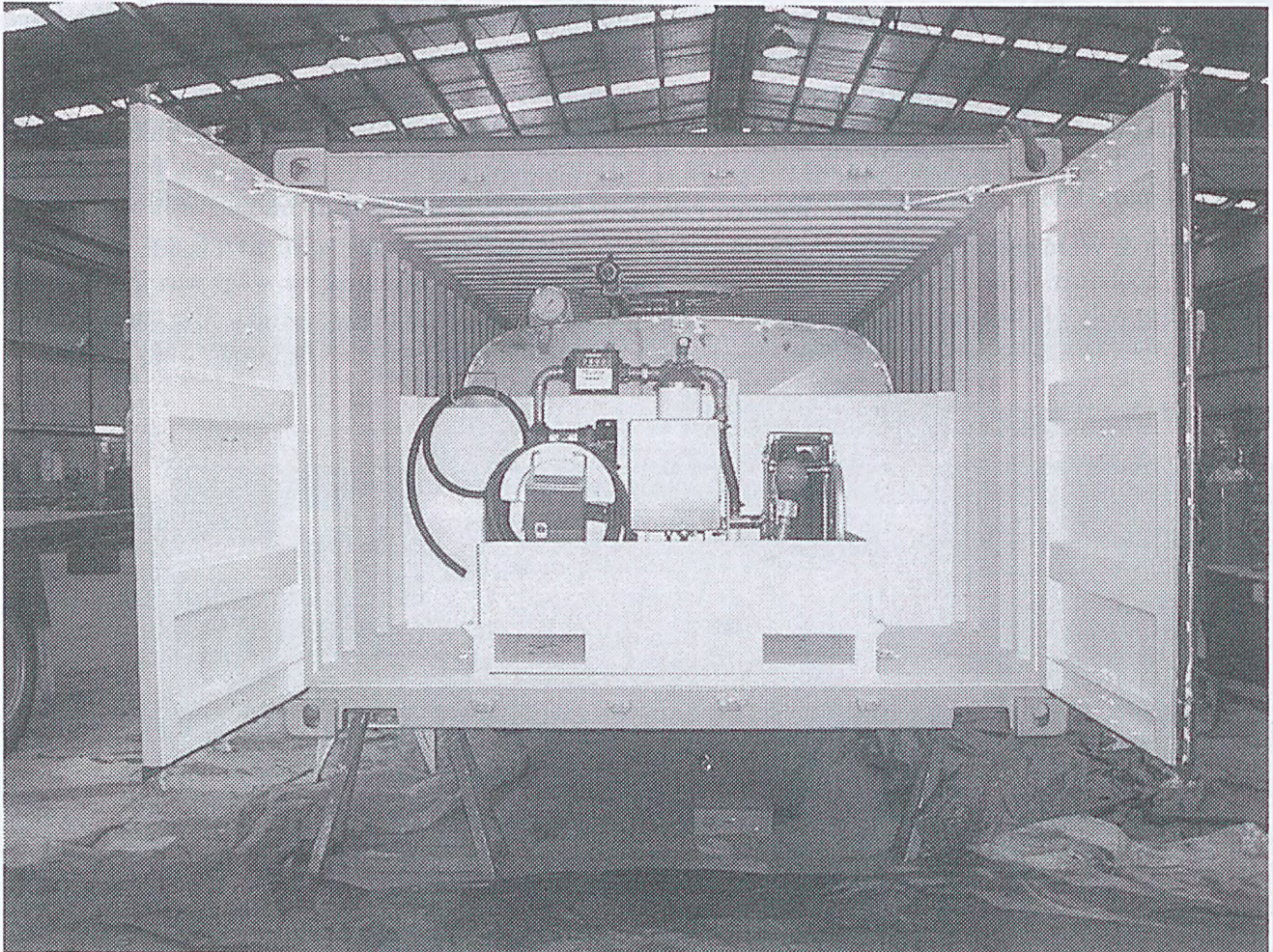
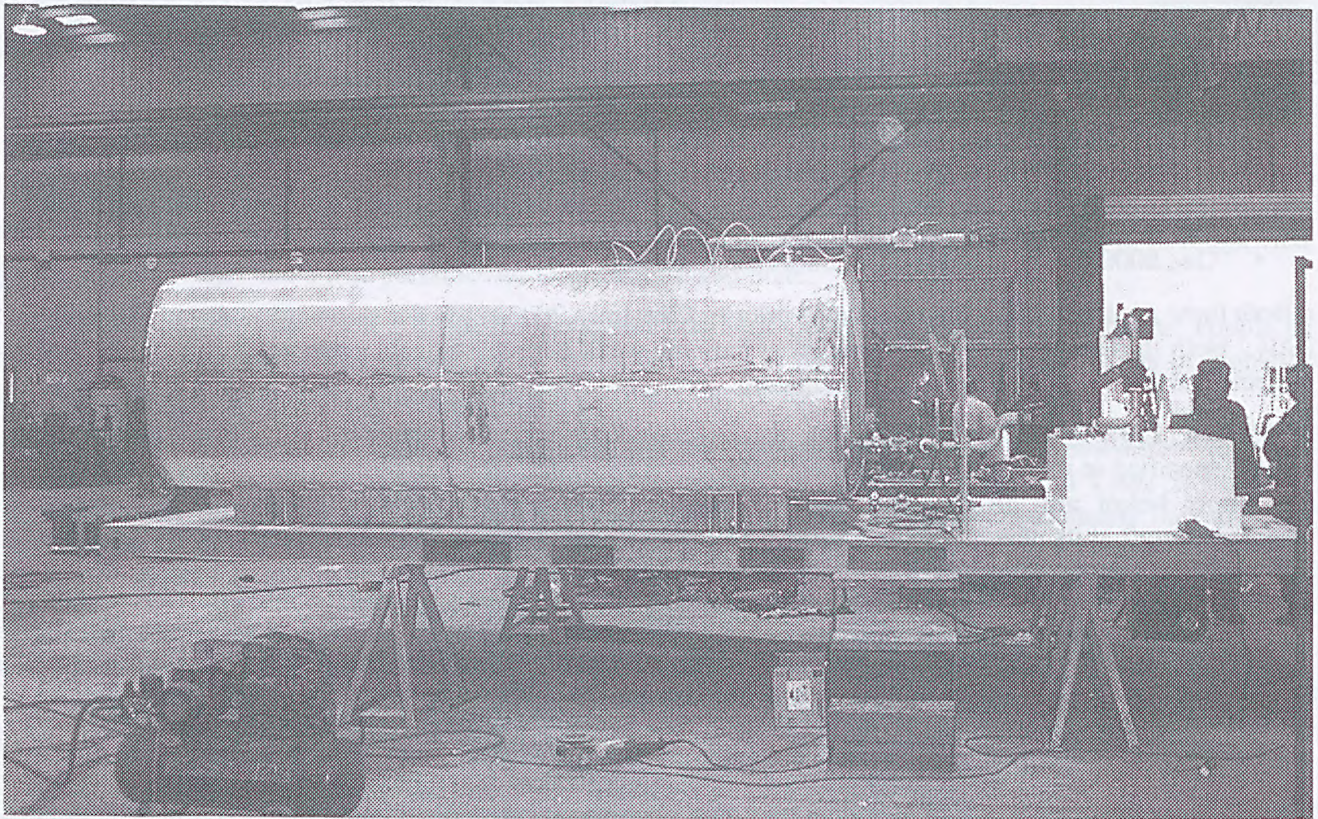
8000 LITRE CONTAINERISED FUEL TANK

AAD specified in its original tender a requirement for an 8000 litre containerised stainless steel fuel tank complete with dispensing system for the refuelling of vehicles in Antarctica. The containerised fuel tank was to be transported on a tracked trailer cross country to refuel vehicles operating at or near Casey Station.

Saunders & Ward manufactured the fuel tank out of 316-grade stainless steel and fitted it inside a specially modified container complete with fuel dispensing system. A specific requirement by AAD was to lower the centre of gravity of the fuel tank which required the container to be shortened in height. The containerised fuel tank was to be trialed at Casey during the 2003/2004 summer. (See photos on following page)

[Text and photos supplied by Nicholas Saunders]







The launch of the new Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC) was reported in the September issue of *Ice Breaker* last year.

There wasn't much room in that column, however, to report on what the new ACE CRC will be doing over the next seven years. In this column, I'll explain what the ACE CRC is all about and what we hope to achieve.

The ACE CRC has two main areas of focus: the effects of climate change on the sustainable management of Antarctic marine ecosystems and the study of atmospheric and oceanic processes of the Southern Ocean and their role in global and regional climate change.

Our research is arranged in five integrated research programs.

Climate Variability and Change is led by Dr Steve Rintoul, of CSIRO Marine Research. The program aims to describe, understand - and ultimately predict - the variability of Southern Ocean currents and sea ice and its influence on climate and marine ecosystems.

Sea Level Rise, led by Dr John Church, also of CSIRO Marine Research, is estimating the magnitudes and potential impacts of sea level rise this century, including consideration of likely increases in storm surges for coastal areas in Australia and our neighbours.

Antarctic Marine Ecosystems is led by Dr Steve Nicol of the Australian Antarctic Division. In this program, ACE researchers will be investigating the impact of climate change and global warming on Antarctic marine and Southern Ocean ecosystems and Southern Ocean fisheries and their management.

Associate Professor Tom Trull, of the University of Tasmania and CSIRO, is leading the **Ocean Control of Carbon Dioxide** program. This program is estimating the role of the Southern Ocean in the uptake of atmospheric carbon dioxide and the risks and effectiveness of proposals to enhance that uptake through iron fertilisation.

The **Policy** program will translate the research outputs of ACE CRC science into implications for law, policy and regulations that might be applicable to management of Antarctica and the Southern Ocean. The Policy Program also will research the effectiveness of national and international policies and management arrangements governing the Southern Ocean and Antarctica. Dr Marcus Haward, of the University of Tasmania, leads this program.

These research programs are supported by ACE CRC programs in **Education**, (led by Associate Professor Andrew McMinn, University of Tasmania), **Commercialisation** (Christie le Goy) and **Communication** (Katrina Nitschke). Through the Institute of Antarctic and Southern Ocean Studies (IASOS), the Education program will produce the next generation of specialists in environmental and marine science, law and policy. The **Commercialisation** program will ensure the development of all commercial opportunities arising from ACE CRC work and quantify the economic value to Australia of ACE CRC research. The **Communication** program will ensure the effective transfer of knowledge from the ACE CRC to users in Government, policy, industry and the broader public.

The work of ACE has been gathering steam for the past few months. I am very excited about the research programs that have taken shape under the guidance of our Program Leaders and look forward to sharing the results in future *Ice Breaker* columns.

Prof. Bruce Mapstone
CEO, ACE CRC

THE DEVIL IS IN THE DETAIL

Environmental Improvements through Working with Suppliers to the AAD.

Environmental sensitivities, often compounded by remoteness, make some of the environmental issues in Antarctica and the Southern Oceans unique to these regions. Resolution is often in the detailed planning and delivery of goods and services by the Australian Antarctic Division (AAD).

For example did you know that:

- Polystyrene beads and chips are prohibited in Antarctica? The ingestion of polystyrene fragments by petrels have lead to the death of birds and their chicks;
- In the past AAD Stations have been supplied 25,000 plastic containers per year of soft drink, fruit juice and cleaning products (8000+ per station) to satisfy normal consumer demands. This becomes an issue for waste management. Inappropriately stored waste easily becomes wind blown debris, and having excessive numbers of individual containers compounds the issue; and
- Hiking gear such as gaiters, jackets, poles, bags in particular Velcro are a biological hazard to sub-Antarctic Islands? If previously used elsewhere in the world this gear is likely to be carrying seeds, other plant material and /or insects that could become a weed or a pest.

The AAD has been working with suppliers to ensure goods are not supplied in polystyrene beads and chips and packaging is minimised.

Hospital Supplies of Australia in Hobart have a 'one stop shop' contract for the supply and servicing of pharmaceutical and medical items to the AAD. A waste management strategy was developed as part of the contract documentation identifying strategies for not only minimising waste but also innovative and creative solutions to packaging.

Waste management is a contract key performance indicator that will enable the AAD to monitor contractor waste management performance. This shipping season the AAD recorded no waste management non-conformances for the supply of pharmaceutical and medical supplies, which indicates that partnering arrangements such as this can have a significant influence in AAD environmental strategies.

The AAD has also identified purchasing as an area where it can make a significant impact in environmental management. Environmental Purchasing Guidelines have been developed (available on the AAD Website at <http://www.aad.gov.au/default.asp?casid=13062>) that are available for staff involved in the requisitioning and purchasing process and also to contractors and suppliers wishing to supply goods and services or tender for business with the AAD.

Purdon Featherstone of Hobart are provedores to the AAD. It is critical that the foodstuffs they provide us are done so in accordance with strict environmental guidelines. The company has demonstrated a commitment to support the AAD environmental goals and objectives and a willingness to continuously improve in areas such as packing and handling.

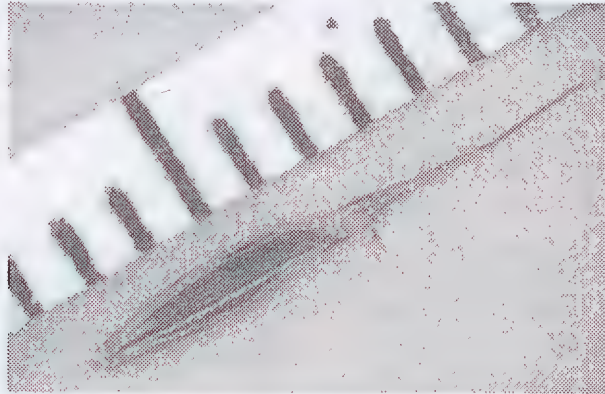
To reduce the number of individual plastic containers the first step taken by the AAD was to source cleaning products in bulk. The range currently used has been selected for both its suitability in commercial settings and environmental performance. The products are set up on racks on station and dispensed directly into buckets and /or sinks. Expeditioners are trained in the use of the new products prior to departure.

By working with the provedore there is also to be a decrease in the number of individual soft drink and fruit juice bottles supplied to the AAD's research stations. From 2004 soft drinks are to be largely supplied from post-mix machines. Fruit juice will be supplied in concentrates and made up daily.

In terms of biological hazards, the AAD has worked with suppliers to redesign its field equipment and clothing range. Prototypes are being designed and manufactured that will minimise or eliminate the threat of alien organisms to sub-Antarctic islands. This includes:

- Rounded pockets that are easy to vacuum, and so minimise the introduction of unwanted organisms;
- Not using fasteners such as Velcro, which attract seeds, or fabrics such as open weave mesh, which has the ability to trap seeds, soil and insects.

Coupled with these design modifications are better training of expeditioners and surveillance of equipment being taken to sub-Antarctic Islands to ensure gear is either new or rigorously clean.



Grass seed found on expeditioner's clothing. AAD Photo

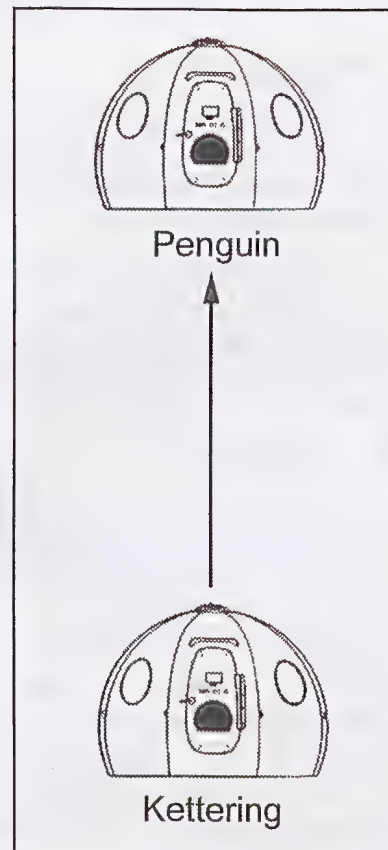
For more information contact Shaun Walsh, Operations Branch Environment Advisor at shaun.walsh@aad.gov.au or Roger Knowles, Supply Chain Facilitator, at roger.knowles@aad.gov.au

[This article kindly supplied to Ice Breaker by Shaun Walsh, Environment Advisor, Operations Branch, Australian Antarctic Division. Reviewed and edited by Sally Chambers, Communications Manager, AAD]

PENGUIN'S IGLOOS

Malcolm Wallhead and Associates are pleased to announce that a Manufacture Under Licence (MUL) agreement has been signed with Penguin Fibreglass Pty Ltd to manufacturing Igloo Satellite Cabins and other fibreglass products originally designed by the late Malcolm Wallhead. Moulds for all products have been moved to Penguin Fibreglass's factory site near Penguin on Tasmania's northwest coast, and enquiries for any products can be made to Anthea Wallhead at Kettering, or John van der Woude at Penguin.

A Tasmanian-owned private company with a workforce of 13, Penguin Fibreglass Pty Ltd has been in operation on the northwest coast for over 25 years. The company manufactures a wide range of Glass Reinforced Plastic (GRP) products suitable for a number of environments including industrial, underground, marine and recreational. Their capacity to design, develop, test, manufacture and repair GRP products and their willingness to customise products to suit specific needs will be advantageous to the manufacture of Igloos and other polar field equipment. The two businesses will be working together to expand polar contacts and introduce Igloos to less developed markets such as eco-tourism.





BIG BIRD BETS

Expected to start this month is the Ladbrokes.com Big Bird Race. Tasmanian researchers have been given a grant to tag 18 albatrosses with satellite transmitters and scientists will monitor the bird's migration path from Tasmania to southern Africa.

Punters all over the world will be able to bet via the Internet on aspects of the race and any income generated will be used for seabird conservation projects. This event has been organised by Tasmanian environmental scientists, the Conservation Foundation and Ladbroke's, the world's largest bookmaking company, with outlets in 230 countries.

AUSTRALIA DAY HONOUR

Congratulations go to **Eric Phillips**, polar explorer now living in Tasmania, who won an Order of Australia Medal this year. Eric is the Director of Ice Trek and the only person to have skied across the world's 4 largest ice caps. He has produced 4 documentaries about his expeditions and 'Chasing the Midnight Sun' won an Emmy Award.

ANTARCTIC EXHIBITIONS

Wildlife photographer **James Dragisic** recently exhibited his Antarctic work at Melbourne's Customs Wharf Gallery and more images are at www.geocities.com/jamesdragisic.

From 6 December 2003 to 29 February 2004, the National Philatelic Collection exhibited commissioned artwork for the stamps of the Australian Antarctic Territory at the Postmaster Gallery in Melbourne, Victoria.

A NEW ADVENTURE

If negotiations between the state government's board of Antarctic and Southern Ocean Science Centre and a Tasmanian company are successful, the site of Antarctic Adventure in Salamanca Square will be redeveloped by Echo Tasmania Pty Ltd, who intend to create a unique tourism attraction featuring Tasmanian foods, produce and cooking. Incorporated in the facility, to be called the Taste Temptation, will be guided food tours, tasting areas, restaurants and retail areas. Echo chairman, **Chris Hartley**, predicts the centre should inject \$100 million into the economy over the next 10 years.

MARITIME HISTORY UPGRADE

Low Head Pilot Station, near George Town in northern Tasmania, has received \$1.5 million in government funding to redevelop the station's heritage precinct. Plans include tourist accommodation in historic cottages; a refurbished maritime museum; a working shipwright's facility; food and beverage outlet; boat ramp and ferry service to Beauty Point and George Town.

ARCTIC ONLINE LEARNING

From the end of December 2003 through to June 2004, polar explorer **Will Steger** will be leading a six-member international team and 30 huskies pulling 3 sleds from Great Slave Lake at Yellowknife to Pangnirtung on Baffin Island in the Northwest Territories of Canada. The 4,800 km trek called 'Arctic Transect' is an educational initiative of the University of Minnesota and Nomads Online Classroom and will assist in the development of learning modules based on 3 curriculum objectives: 'Experience' (for grades K-3); 'Expand' (Grades 4-8) and 'Explore' (Grades 9-13). Studies based on this 'adventure learning' experience include global warming, changes in Arctic ecosystems and interaction between the expeditioners, communities and their environment. For further details see www.polarhusky.com.

TPN TO GERMANY

Congratulations to 2 TPN members chosen to represent the Tasmanian Polar Network at the Trade Show held concurrently with the COMNAP and SCAR meetings in Bremen, Germany this July. **Judy Hennessey** of Aurora Designs and **Chris Boucher** of Barking Spider will be attending, along with representatives of other private businesses and Antarctic Tasmania.

EVIDENCE OF WARMING

Recently released photos show clear evidence of the effects of global warming on a Patagonian glacier in South America. Photos taken in 1928 and again in 2004 show the original glacier full of ice has been reduced to a mountain lake containing a few small icebergs. Greenpeace has noted the rate of ice loss from ice fields has more than doubled between 1995-2000. As well, NASA has named soot from diesel engines and other sources, which blocks snow and ice from reflecting sunlight, as another contributor to melting the ice.

GYOTAKU DEMONSTRATIONS

The internationally acclaimed Japanese artist **Boshu Nagase** is visiting Hobart from February 11 to April 28 2004 to work on a folio of prints of Antarctic fish. These fish prints will be used to illustrate a large-format book on Antarctic fish being edited by **Harvey Marchant** of the Australian Antarctic Division and Mitsuo Fukuchi of the Japanese National Institute for Polar Research. The launch of the book is planned for the 25th anniversary of CCAMLR in October 2006.

Boshu Nagase's visit is being sponsored by the Australian Antarctic Division and the Japanese National Institute of Polar Research.

Boshu Nagase has over 30 year's experience of a printing art known as gyotaku (*gyo* = fish; *taku* = print, impression, rubbing). Gyotaku is a distinctively Japanese way of illustrating nature. In its simplest form (the direct method) paint is applied to a fish, shell or plant and a print is taken of the object onto paper or cloth. The indirect method of gyotaku requires much greater skill.

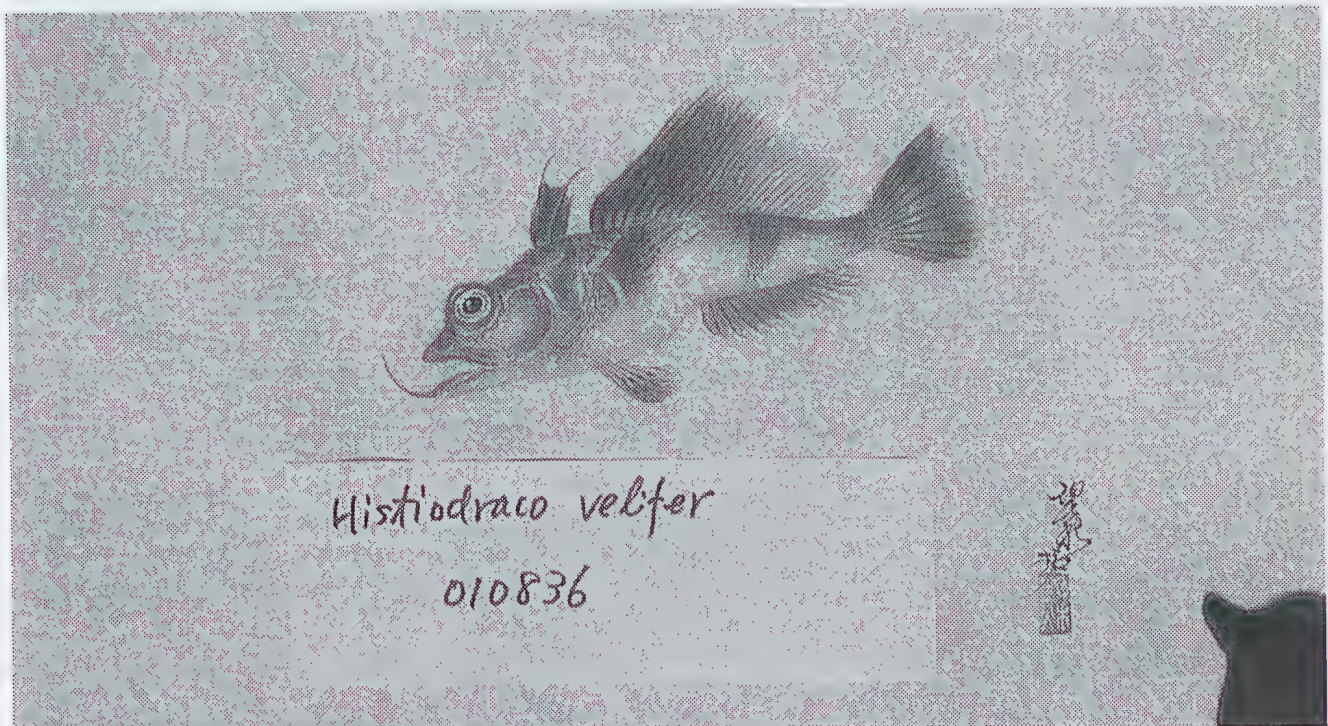
For the indirect method, fine special paper, not much thicker than tissue paper, is moistened and pressed to the surface of a fish or plant. Coloured inks are then applied in layers to colour the imprint of the organism. The result is an anatomically exact copy of the organism and coloured either as it is in nature or as the artist chooses. (See photo below and front cover.)

Boshu Nagase is perhaps the principal living exponent of the indirect method. He has produced folios of gyotaku of the fish of the Great Barrier Reef, the Mediterranean Sea and the marine and freshwater fish of Japan.

He has had exhibitions and his work is on permanent display at the Australian Institute of Marine Science near Townsville, Queensland, the Monaco Museum of Oceanography, the University of Maine and in various Japanese galleries.

During his visit to Hobart, Boshu Nagase will be demonstrating the art of gyotaku at the Tasmanian Museum and Art Gallery on Saturday 6 March as part of the "Artist live in the Gallery" program, Mure's Lower Deck on Thursday 18 March and the Australian Antarctic Division on Saturday 27 March and Saturday 17 April.

Contact Harvey Marchant (harvey.marchant@aad.gov.au) or 0419390492 for more information



FAREWELL TO THE "AKADEMIK SHOKALSKIY"

Heritage Expeditions New Zealand Ltd has announced that they are to replace their current Russian chartered polar vessel with a newer vessel for the 2004-05 Austral cruise season. The new vessel, to be named "Spirit of Enderby", is scheduled to be refurbished in Lyttelton in November 2004 and promises to continue to upgrade the hands-on experience offered to Antarctic tourists by the Christchurch based family operated company.

The company, which is a member of the International Association of Antarctic Tour Operators (IAATO), was founded in 1985 by Rodney Russ and his partner Shirley. Rodney is a former NZ Wildlife Service biologist with an extensive sub-Antarctic record who recognised the potential for running adventure tourism/wildlife cruises to the remote sub-Antarctic islands. Heritage expedition's cruises have proved especially popular with birdwatchers. Their current "Akademik Shokalskiy" which was built in 1983 proved ideal for the role carrying only 46 passengers, which has encouraged a close camaraderie amongst passengers and crew. The small numbers have also meant an open bridge policy and a ready availability of a place on a zodiac for shore excursions. The company is licensed by both the New Zealand and Australian Governments to land passengers at a number of sub-Antarctic islands. In recent seasons Heritage have added amphibious all-terrain vehicles to improve over-ice access to on-shore locations in the Antarctic. Heritage have now operated "Akademik Shokalskiy" for 10 years with a Russian ship crew under Captain Igor Kiseley, along with an experienced New Zealand and Australian expedition and hotel staff.

In recent seasons Heritage Expeditions have added more destinations to their itineraries with cruises now regularly operated also in the Indian Ocean as well as offering tour packages in the South Atlantic /Antarctic peninsular areas on similar vessels. It is also this season developing a new destination with a "North to the Kermadec Islands" diving and bird watching expedition. The Kermadec Islands are a chain of volcanically active subtropical islands located some 800 km to the north east of the north island of New Zealand.

On the 1st of February, 2004 the "Akademik Shokalskiy" returned to Bluff from her last scheduled voyage to historic sites in the Ross Sea. According to Antarctic historian and tour guide Baden Norris, the voyage had gone well with ice conditions much easier than in recent seasons. The vessel was then being restocked for a private wildlife charter trip to NZ and Australian sub-Antarctic islands. Heritage's new "Spirit of Enderby" is a more modern sister ship to "Akademik Shokalskiy". Built in 1984 as the "Professor Khromov", its refurbishment in Lyttelton will include provision for a helicopter which will be carried only on Antarctic expeditions. The name Enderby comes from the sub-Antarctic Enderby Island, one of the Auckland Island group. Enderby Island has always been a highlight of Heritage Expedition's bird watching expeditions.

[This article and photos kindly supplied to Ice Breaker by Steven McLachlan - steve@philatelic.org.nz]

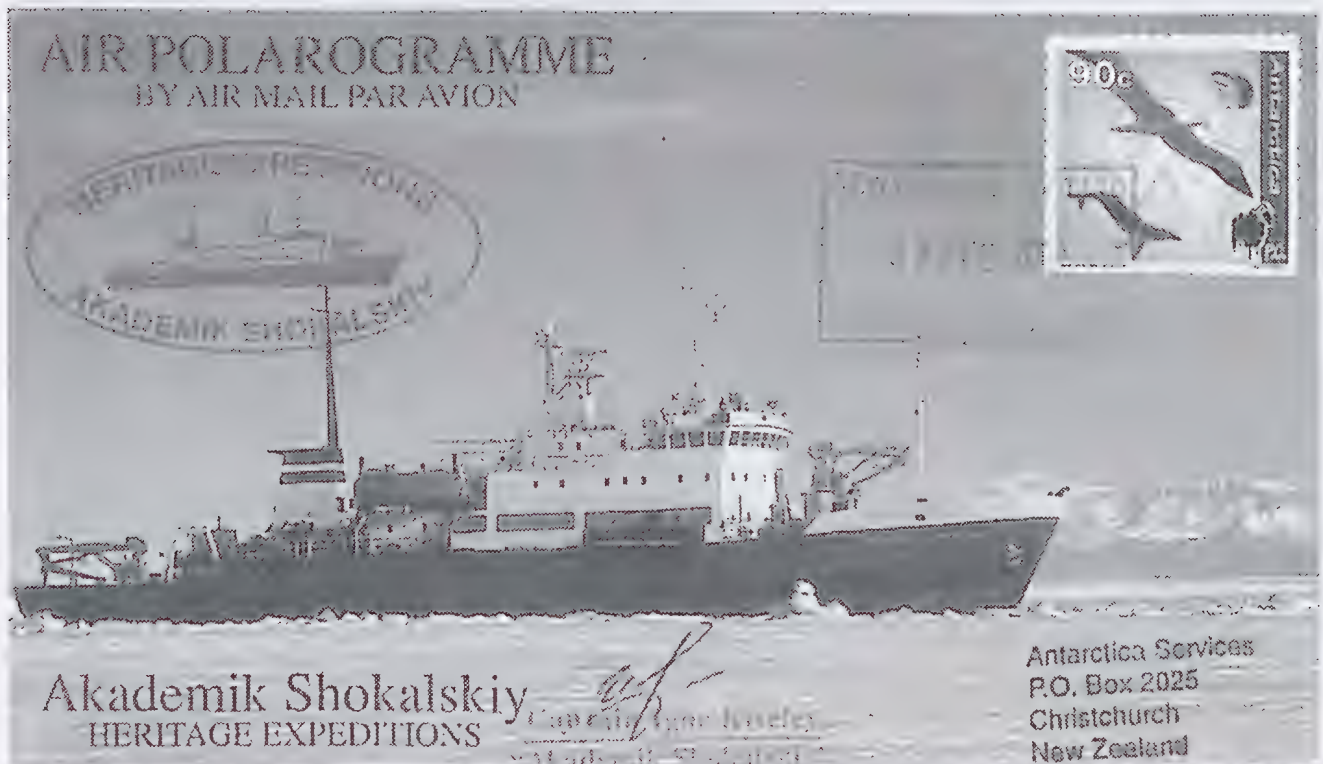


'Akademik Shokalskiy'
berthed at Bluff, NZ on
1st February 2004.



Left: Captain Igor Kiseley in his Day Room.

Below: Polarogramme showing 'Akademik Shokalskiy' in the Ross Sea with the Trans-Antarctic Mountains in the background.



POLAR PATHWAYS: Louis Bernacchi and Maria Island

Text and photos by Irina Karmanovskaia

While visiting Maria Island we stopped for a picnic on the hill overlooking a valley and the sea by the ruins of the Bernacchi house. I imagined Bernacchi's family camping in the corner of this building until a house could be repaired for their use. Delighted to rest for a while, to look around, to breathe the fresh sea air I recollected the story of Bernacchi's life on Maria island.

It happened more than a century ago... Louis Charles Bernacchi (1876 – 1942), the first Australian Antarctic explorer, was the eldest child of Diego and Barbe Bernacchi. In some references you will find that the family arrived in Launceston on the "Flinders" and then proceeded to Hobart and Maria Island, in others that their first port of call was Hobart. In any case, the family of five arrived in Tasmania in January 1884, and settled on Maria Island in the town of Darlington. At that stage Diego Bernacchi was extremely well off and took a lease over the entire island. The family brought not only their furniture and provisions with them, but dogs, horses, sheep, pigs, cows and many other useful items.



Look at the photo (above) of the island - isn't it beautiful, this "summer isle of Eden, lying in the dark purple sphere of sea"? Diego Bernacchi called Maria Island a Mediterranean paradise. That was a place where the family had been so happy! They all fell in love with its charming green country, with its lakes and forests... Louis stressed the "striking and picturesque appearance" of Maria Island in his "Saga of Discovery". While reading his description one can vividly imagine the island's beauty that still attracts tourists. Its beauty and history even now force families and individuals to board a ferry and leave their vehicles and cares far behind ... Louis was nine years old when they settled there. He spent his youth in these idyllic surroundings, learning "to ride, to shoot, to manage single handed a 22-foot whale boat and to rough it in many outdoor ways...", as Louis wrote in his "Saga".

Maria Island had often been visited in the past by whalers. Louis was quite familiar with their adventure stories, dreaming of his voyages of discovery... Louis enjoyed reading books from the carefully collected family library. His father used to read French classics to him as well. He had a tutor, Tom Bowyers, who was also his father's secretary and came with the family from England. Louis disliked his tutor but nonetheless learned a lot from him. Diego Bernacchi became naturalized in Tasmania on 27th of February 1886 together with his family.

Meanwhile, Darlington was renamed San Diego in 1888. At that time 250 people lived in town. They had a school, shops, butcher, baker, blacksmith, shoemaker, post office and other services that made their life easier. It was their home. Roads were built, land cleared and a thirty-room hotel was opened. In 1888 on the occasion of the 4th anniversary of their settlement on the island, Bernacchi's family organised a big party in San Diego. Many guests arrived from Hobart on the company's ship "Endeavour" which was chartered for this event. A special concert by the members of the Federal Club was held and over 300 tickets were sold. Dancing continued until the next day.

Louis enjoyed meeting new people and listening to stories about their travels and adventures. After being educated privately, Louis spent three years at the Hutchins school in Hobart. The school was built as a memorial to the Venerable William Hutchins, who was the first archdeacon of Tasmania in 1836, when Tasmania was created an archdeaconry. Louis was enrolled on the 6th of May 1889, his student number being 1312. The three years spent at Hobart were very important for his character development.

It was in Hobart where his interest in the Antarctic was first awakened. Hobart was definitely an exciting town for a boy. When the weather was too bad to come back to Maria Island for holidays, he stayed at the home of Bishop Montgomery and was happy to spend some time on the harbour, to talk to whaling seamen who had just returned from sub-Antarctic waters. His schooldays as well as the period of his later studies in Melbourne University coincided with the period of formation of the Australian Antarctic Committee. Louis' interest in different aspects of Antarctic exploration was shown in his letters published in "The Mercury" and "Argus" in 1896 and 1897. Louis Bernacchi's dream to travel to "the cold land of the South" became a reality in 1898...



Photo: The remains of Bernacchi's house on Maria Island

MACQUARIE MEMORIES NO.1 (cont.) by Peter Ford

Hangovers and hazards

For a while after the Second World War, the Australian Government encouraged immigration from Britain and Europe. Settlers were required to work at designated regions for the first two years. One of the places that foreign doctors were sent was Macquarie Island. The island was a fairly benign place to practice medicine. Due to its small population, about 16 to 18 personnel, infectious diseases were non-existent. While colds and the like may have arrived with the crew, within a few weeks, they had all gone. The population was simply not big enough to support a reservoir of infections. So the doctors could usually look forward to having a relaxed time. They spent much of it joining the rest of the crew in their activities. They also used the time to brush up on their English, which was sometimes not the best.

When we arrived to relieve the previous crew, we were told that their doctor had learnt English very well. The only trouble, they realised just before the relief boat arrived, was that his English was well dispersed with what could be quaintly described as Australian vernacular. The crew, being all men, used colourful language as part of everyday conversation. The doctor was a good learner! So the crew had to spend the last weeks of their stay explaining to the doctor which of the words were not used in polite society.

During my second stay, the doctor and I became good friends, so much so that on his subsequent return to Australia, he chose to set up practice in Hobart and became our family doctor. On one occasion at the island, I developed a toothache that needed filling. Medical equipment was primitive and the drill supplied was one of the old style consisting of an endless cord and pulleys. It was driven by a foot pedal! The doctor found that he could not hold the drill still enough while he pedalled the machine. So, I pedalled while he drilled. This turned out to be quite a good idea because as soon as the drill became hot (no anaesthetic), I simply stopped pedalling. Worked like a charm.

The island was plagued with feral cats from the earlier sealers and they were destroying the native birds. Since there are no trees on the island, all the birds nest on the ground. Some are in burrows, others, like the penguins, are on the surface. All were easy pickings for cats. Standing orders were to destroy any cats on sight. However, we acquired a female kitten one day and grew to like it. We reasoned that if we fed it well it would not take to the birds, helped by the fact that there were no birds nesting close to the camp. However, we needed to have it de-sexed. The doctor did the operation successfully and the cat remained a good companion for the time we were there.

Towards the end of the year, our beer became cloudy and we became allergic to it. It caused bad hangovers. According to brewers we consulted when we returned, beer starts going off as soon as it is brewed and should be drunk within three months of brewing. Our drinking sessions were therefore became restricted to the hard liquor which itself caused bad hangovers.

On one occasion, based on a recipe from the doctor, the boys made some vodka from ingredients I prefer not to disclose. During one of the drinking sessions, in which I did not partake, they ran out of this vodka. They were having a good time and decided to make some more right then and there. This time, however, they used more of the main ingredient and less water. I think it was about 120 proof. Apparently that went down well, so they made some more, even stronger. I was told that the next day there was a line at the surgery of very sorry people.

We did warn our relief crew about the beer and advised them to drink theirs early and save the hard stuff for later. They tried our beer and had no bad effects from it. Our allergy to it took time to grow. We enjoyed some of their new beer with no problems.

I nearly had a medical problem when I was trying to fix a kerosene blowtorch. These obsolete devices were used for plumbing and other heating requirements. Pumped kerosene is forced through coils that are preheated by the flame from the nozzle. In this particular one, the nozzle was misdirected and the flame did not go through the coils centrally, causing a poorly shaped flame. While I was manipulating the nozzle with a wrench, it broke off and I was sprayed with burning kerosene. I moved very fast and only received superficial burns to the face and eyebrows. My favourite jacket, however, was ruined, as was the blowtorch.

On another occasion, while working outside with minimal clothing in very cold conditions, I developed a very severe chest pain, making breathing extremely painful. Since, as I have mentioned, there were no infections available, we eventually determined that it was probably dry pleurisy. That is when the lubrication between the lining of the chest wall and the lining of the lungs fails, causing them to stick together. It was a mechanical effect of the extreme cold. A deep breath caused a pain like being stabbed. There was no cure available so I had to put up with it. It was manageable except when someone would tell a joke, laughing was murder. Eventually, after about three weeks of this, someone told a particularly good joke and I laughed so hard that there was a very strong pain and then none. I was cured. Obviously the linings had been pulled apart and normal lubrication restored. Laughter was indeed the best medicine!

Photo: Peter, third from left, with friends at Macquarie Island in the 1950s.



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MAWSON STAMPS

Australia Post issued a set of stamps on February 13, 2004 commemorating 50 years of Mawson Station. In addition to the four stamps depicting the naming ceremony; a recent view of the station; a living caravan and aircraft, and a penguin rookery, this issue includes a first day cover, stamp pack and 4 maximum cards.

New pictorial postmarkers for Macquarie Island and 3 Australian bases will all be available by March 2004. Davis features the LIDAR building; Mawson features the 'Apple' huts; Casey has Weddell seals and Macquarie, the last to be changed, shows Royal Penguins.

POLAR-BOT

The latest companion substitute toy for the elderly and depressed is a robot, shaped like a baby harp seal. It has been designed by Japan's National Institute of Advanced Industrial Science and technology. Called Paro, the white furry seal has tactile, audio, vision and posture sensors, with 7 activators underneath.

SOLO PROBLEMS

In December 2003 **Jon Johanson** became the first person to fly in a single-engined aircraft over the South Pole. Jon flew from Invercargill, NZ, and across the South Pole, but touched down at McMurdo/Scott base when strong winds meant too little fuel was left for a safe crossing to Argentina.

Although Jon was able to pay for extra fuel, both USA and NZ officials refused to refuel his plane because of their policy of not assisting private expeditions, and both offered him flights to NZ instead, leaving his RV-4 aircraft to be shipped back later. Despite intervention by Australia, asking for an exception in this instance, USA and NZ maintained their policy.

However, a British aviator, Polly Vacher, offered to sell Jon the extra fuel she had stored at McMurdo for her charity flight. She was unable to continue because of bad weather, so after being stranded for 7 days at McMurdo, Jon was able to refuel and made a safe flight to Invercargill, then Hobart and back to Adelaide.

SCIENCE PRIZE

CSIRO marine ecologist **Keith Sainsbury** has won the Japan Prize, one of the world's most prestigious science prizes. This was awarded for

Dr Sainsbury's research into the impacts of seabed trawling on marine ecosystems, thus contributing to improved fisheries management and sustainability.

HELICOPTER CRASH

Two adventurers attempting to fly a helicopter north-south around the world had to abandon their journey when their helicopter crashed 170 kms from Patriot Hills in Antarctica. Both Jenny Murray and her co-pilot Colin Bodill were injured, but they managed to set up a tent for survival, and their distress beacon signal was picked up in Scotland. After several hours' wait, they were rescued by a Twin Otter pilot from Antarctic Logistics and Expeditions, treated by a doctor and later flown to Punta Arenas.

AMC EXTENSION

The Australian Maritime College near Launceston, Tasmania, plans to establish a 150-student education facility at Point Nepean, on historic Defence Department land recently handed to the Victorian Government for use as a National Park. Students will be attending AMC's first interstate campus in 2005.

HEARD AND SEEN

The activities of penguins, seals and seabirds on Heard Island can now be followed daily because Antarctic biologists have set up satellite trackers to transmit these movements. Updated information is available at www.aad.gov.au/heard.

As well, a specially designed video system has been recording the underwater life around Heard Island and large squid, Patagonian toothfish and gardens of feather stars (related to sea urchins) were filmed during a recent voyage by *Aurora Australis*. The main aim of the voyage was to study the foraging areas of king and macaroni penguins, as well as fur seals.

UNITY ONLY ON ICE

Despite continuing conflict between their 2 countries, four Palestinians and 4 Israelis embarked on a voyage to Antarctica in December last year. Their expedition is called 'Breaking the Ice' and aims to build trust between team members by providing them with a common goal, which is to climb an unnamed and unexplored mountain near the Bruce Plateau. Their team banner depicts 2 doves flying near Israeli and Palestinian flags.

TPN CHAIRMAN WINS AUSTRALIA'S TOP ENGINEERING AWARD

At a special ceremony at Tasmania's Parliament House in Hobart, the Chairman of the Tasmanian Polar Network, **Bill Lawson** has been awarded Engineers Australia highest personal honour - Professional Engineer of the Year 2003. Mr Lawson was presented with his special award on Wednesday 3rd December by the Tasmania Premier, Jim Bacon with the National President of Engineers Australia, Peter Greenwood.

In his capacity as TPN Chairman Mr Lawson is quite active in promoting Tasmania and Tasmanians in the global Antarctic community with a view to optimising Tasmania's commercial opportunities in this sector leveraging off Tasmania's geographic strategic advantage for both Antarctica and the Southern Oceans.

Engineers Australia says Bill is not just an excellent engineer, but he has used his skills to bridge gaps with unemployed youth and indigenous communities, leading the nation in 'social engineering'.

A principal with consulting firm Sinclair Knight Merz (SKM) Bill has 30 years involvement in municipal engineering and structures, putting his considerable background and experience together to lead the SKM project management team on the unique Abt Railway Reconstruction project. The Abt Railway was Tasmania's major Bicentenary project requiring careful management of technical, environmental, heritage and social considerations to build a tourist railway on Tasmania's rugged West Coast. The railway received national recognition in 2001 when it won an Australian Engineering Excellence Award.

Bill's considerable social engineering skills are leading the way in Australia and the results have been uplifting. Recently he was fully involved with the design and construction of Interpretive Centre and Gallery for the Warumungu people at Tennant Creek in the Northern Territory that has won a number of major national awards.

Responsible for setting up the Beacon Foundation in 1987 to create practical programs to assist young people make informed and achievable decisions about their futures, Beacon is now in all States as well as the Northern Territory. In recognition of his untiring efforts in helping Australian youth Bill was awarded the Centenary Medal in 2002.

The Professional Engineer Award for 2003 represents outstanding contributions to both engineering and the community. The award recognises competence and significant achievement in community affairs, demonstrated understanding of the role and purpose of the engineering profession with in society, plus proficiency in the use of communication skills.■



The new approach to the Frank Hurley Building at AAD, Kingston, Tas.

AUSTRALIAN ANTARCTIC DIVISION NEWS

On Friday, February 13, 2004, His Excellency the Governor-General, Major General Michael Jeffery officially opened the new and refurbished buildings at the AAD in Kingston, Tasmania. This date was also the 50th anniversary of the opening of Mawson Station, Australia's first Antarctic base. (See photo below)

The buildings are named after Sir Douglas Mawson and five of his companions on his 1911-14 Antarctic expedition. From left to right when facing the AAD from the Channel Highway, the newly named facilities are the Frank Wilding building, the Charles Harrisson building (named after the only Tasmanian in the expedition) the John King Davis building, and behind these three is the Walter Hannan building. Furthest right is the Frank Hurley building, with the Sir Douglas Mawson building behind. The new facilities include laboratories for biological, ecological and atmospheric science research, studies of marine organisms such as krill, and the effects of toxic pollutants.

The Frank Hurley building now has a map of Antarctica and Tasmania on the approach to the entrance, with a globe featuring Antarctica on a pedestal to the right. The upper floor houses the Reception Desk as before, and a new area currently displaying the Mawson exhibition, which will move to Parliament House, Canberra in May 2004. Centrally on this floor are interactive computer facilities and an Antarctic clothes dress-up area for students. A door to the right leads to the Library. These areas, as well as the Antarctic Cafe downstairs, are open to the public.

The Mawson Exhibition includes photographs of life at Mawson Station over the past 50 years, plus the original desk from 'Aurora', Mawson's ship. The exhibition was prepared by Pauline de Voss, with text and research by Liz Haywood. A selection of Antarctic photos by Lyn Irvine is also on display, along with paintings by Alistair McGregor, other memorabilia and more recent Mawson Station posters.

Once the Mawson exhibition moves to Canberra, more work on the permanent display areas will occur, and overall design is being developed by Tasmanian Polar Network member and graphic designer, **Pingala Walsh**. Already completed is the very impressive 6 metre long Antarctic mural just inside the entrance, and a further 12 large panels will complete the permanent display. On the inner side of the new display area is a large interpretive panel by Viv Carroll, which emphasises Antarctica's value to Australia, as well as an Antarctic map made from satellite images. Pairs of window shades are included on 2 sides of the display space, and feature Aurora Australis images, phytoplankton, anemones and sub-Antarctic lichens.





Above: Pingala's Antarctic mural. Below: Interpretive panel and ship's desk in Mawson Exhibition, AAD.





BOOKS

THE ICE AND THE INLAND – Mawson, Flynn and the Myth of the Frontier by Brigid Hains. Published by Melbourne University Publishing. Price: Unknown

- Compares the lives and achievements of two well-known Australians, Sir Douglas Mawson and Rev. John Flynn.

TO THE ICE – Images from the Antarctic by Jenni Mitchell. Published by Line Publications 2003. Price: \$49.95

- Comprises several pages of text about Jenni's voyage to Antarctica in 2002 plus pictures of photos and paintings of Antarctic scenes.

SCOTT'S LAST EXPEDITION: The Journals of Captain R.F. Scott. Published by Pan Books. Price \$25.

- Based on Scott's journals describing his journey to the South Pole and recording his last thoughts before his death on the return trip to the coast.

FILM

DOLPHIN GLIDE by David Greenough.

- Filmed from a dolphin's viewpoint, showing dolphins in formation and close-up behind, underneath and through breaking waves.

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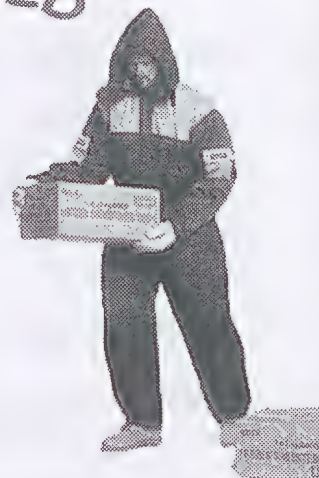
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POLAR CALENDAR



19	February	2004	Skytraders takes delivery of the first CASA-212 aircraft to be used for the Hobart to Casey Base air link.
6	March	2004	Boshu Nagase demonstrating gyotaku at TMAG, Hobart, Tas.
18	March	2004	Boshu Nagase demonstrating gyotaku at Mure's Lower Deck. Hobart, Tas.
?	March	2004	Launch of Tasmania's new 'Antarctic, Sub-Antarctic and Southern Ocean Policy'. Hobart, Tas.
26	March	2004	Tasmanian Polar Network meeting. 11.00am-1.00pm. Contact Antarctic Tasmania for venue. Hobart, Tas.
27	March	2004	Boshu Nagase demonstrating gyotaku at AAD. Kingston, Tas.
28	March	2004	Open Day, Marine Discovery Centre and Woodbridge School. Woodbridge, Tas. (See insert)
17	April	2004	Boshu Nagase demonstrating gyotaku at AAD. Kingston, Tas.
27-30	April	2004	International Association of Antarctic Tour Operators (IAATO) Annual General Meeting. Christchurch, NZ.
3-5	May	2004	2 nd Malaysian International Seminar on Antarctica: Global Laboratory for Scientific and International Cooperation. Penang, Malaysia.
24-28	May	2004	Committee for Environmental Protection Meeting. Cape Town, S. Africa.
24 4	May June	2004- 2004	27 th Antarctic Treaty Consultative Meeting. Cape Town, South Africa.
11	June	2004	TPN meeting with the Governor of Tasmania, Richard Butler, to attend. Hobart, Tas.
18-27	June	2004	Antarctic Tasmania Midwinter Festival. Hobart, Tas.
29 22	June July	2004- 2004	International Whaling Commission meetings. Sorrento, Italy.
13-17	July	2004	International Symposium on Cold Region Development (ISCORD). Sapporo, Hokkaido, Japan. Contact: sasaki@decnet.or.jp
25-31	July	2004	COMNAP XVI and SCAR 28 Meetings. Bremen, Germany. Further details www.comnap16.org and www.scar28.org

12-15	July	2005	COMNAP XVII meetings. Sofia, Bulgaria.
	July	2006	COMNAP XVIII Meetings. Hobart, Tasmania.



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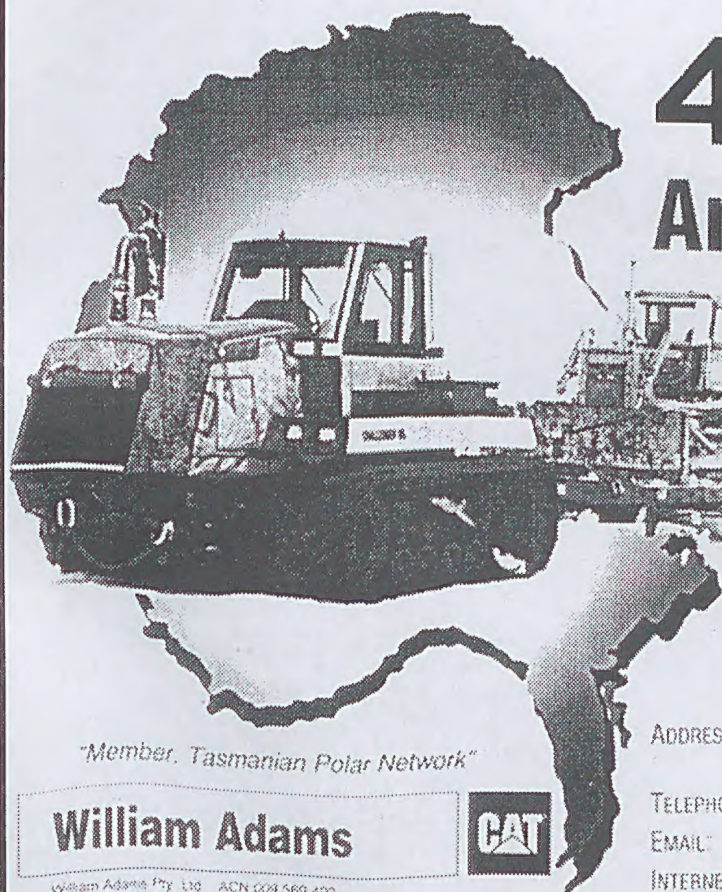
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ANTARCTIC AND SOUTHERN OCEAN SHIPPING CALENDAR

2	March	2004	STHN SUPPORTER	Arrives Fremantle, W.A. Off-hire.
5	March	2004	L'ASTROLABE	Hobart.
5-11	March	2004	AURORA AUSTRALIS V7	Macquarie Island.
14-15	March	2004	AURORA AUSTRALIS V7	Arrives Hobart. Off-hire.
<hr/>				
2-22	October	2004	AURORA AUSTRALIS V1	Departs Hobart for Marine Science.
29	October	2004	AURORA AUSTRALIS V1	Casey Base.
3	November	2004		
7-12	November	2004	AURORA AUSTRALIS V1	Marine Science.
22-24	November	2004	AURORA AUSTRALIS V1	Arrives Hobart. Departs for Davis base.
6-10	December	2004	AURORA AUSTRALIS V2	Davis Base.
14-17	December	2004	AURORA AUSTRALIS V2	Mawson Base.
27-29	December	2004	AURORA AUSTRALIS V2	Arrives Fremantle. Departs for Marine Sci.
31	December	2004	AURORA AUSTRALIS V3	Marine Science.
19	February	2005		
22-24	February	2005	AURORA AUSTRALIS V3	Davis Base.

For updates: www.hpc.com.au/expected and www.aad.gov.au/goingsouth





MEDIA ALERT

Woodbridge School Fair and Marine Discovery Centre Open Day Sunday the 28th of March – commencing at 10am

The D'Entrecasteaux Channel will be the picturesque backdrop for a great day out for the whole family at the **Woodbridge School Fair and Marine Discovery Centre Open Day** to be held on **Sunday the 28th of March – commencing at 10am.**

The many activities and events planned for the day will be staged at various locations along the beautiful Peppermint Bay foreshore, as well as out on the sheltered waters of the bay.

There will be plenty of things to do and see on the stunning grounds of the **Village Green** at the popular **Peppermint Bay development**, also at the **adjacent Marine Discovery Centre** and nearby **Silverwater Park**.

On and around the Village Green and Marine Discovery Centre there will be a great range of stalls, food and refreshments, parades, children's activities and much, much more.

Along the path at nearby **Silverwater Park** visitors can relax on the lush, green lawns overlooking the bay, and enjoy the live performances at the **Music in the Park** presentation, also take in fire fighting demonstrations, and participate in some games and events – fun for all ages.

For further information on the School Fair and Marine Discovery Centre Open Day contact the Woodbridge School during office hours on 03 6267 4667 or contact the event's publicity office Phil Wood on 0408 674 277